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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,525	07/01/2003	Fred C. Tramm	000329-804/TRWP122US	2180
23623	7590	11/07/2006	EXAMINER	
AMIN, TUROCY & CALVIN, LLP 1900 EAST 9TH STREET, NATIONAL CITY CENTER 24TH FLOOR, CLEVELAND, OH 44114			LU, JIA	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

38

Office Action Summary	Application No. 10/611,525	Applicant(s) TRAMM ET AL.	
	Examiner Jia W. Lu	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1, 2, 4, 10-16, 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,541,607, in view of US 4,675,628.
 - a. Regarding claim 1, 2, 4, 10-13, 24, 25, 28, 30, '607 describe a signal processing system comprising a component that receives an antenna pointing signal, a modulation component (column 3, lines 5-10), phase shifting the signal (column 6, lines 25-60), and it is inherent that this beamforming system can facilitate auto-tracking of the antenna. While '607 does not describe the use of a monolithic PIN diode phase shifter, such a feature is well known in the art (see '628 abstract) and it would

have been obvious to one ordinarily skilled in the art to use the monolithic PIN diode phase shifter in the phase shifting system of '607 in order provide low cost, easily reproducible units.

- b. Regarding claims 14, 29, it is obvious that antenna tracking unit can be used in connection with either a satellite, aircraft or spacecraft (official notice).
 - c. Regarding claim 15, '628 describes the DC bias (abstract); for reason to combine see above.
 - d. Regarding claim 16, 27, '628 describes the use of a filter (column 4, lines 60-65); for reason to combine see above.
 - e. Regarding claim 26, '628 describes the switching between a possible reference and a delay line; for reason to combine see above.
2. Claims 3, 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,541,607 and US 4,675,628, in view of US 4,638,269 and US 3,882,431. While '607-'628 do not describe the use of reflective (in series – see '269 column 2, lines 37-48) phase shifters, '431 shows this feature including hybrid coupling and 90 and 180 degrees phase shifts (see column 2, lines 46-63), and it would have been obvious to one ordinarily skilled in the art to incorporate this feature into the system of '607 in order to produce minimal phase shift variations and higher power loadings.
3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,541,607 and US 4,675,628, in view of US 3,768,050. While '607-'628 do not

describe a high Q RF short component, such a feature is well known in the art (see '050, column 6, lines 15-20), and it is implicit that a high Q component would provide a higher quality of the circuit and improve overall performance. It would have been obvious to one ordinarily skilled in the art to use this component in '607 in order to provide added protection in the unit.

4. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,541,607 and US 4,675,628, in view of US 2004/0235426 A1.
 - a. Regarding claim 18, while 607-'628 do not describe a transceiver, '426 does. It would have been obvious to one ordinarily skilled in the art to incorporate features of '607 into a transceiver in order to perform both transmitting and receiving and provide additional noise reduction opportunities.
 - b. Claim 19 reads on the limitations of claim 2 above.
 - c. Claim 20 reads on the limitations of claim 1 above.
 - d. Claim 21 reads on the limitations of claim 14 above.
 - e. Claim 22 reads on the limitations of claim 13 above.
 - f. Regarding claim 23, '607 discloses the use of a computer in combination with the system (figure 3, element 40), and it is inherent that a computer can incorporate programs that act to improve overall performance of the system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042. The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jia Lu
Examiner
AU375
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CHIEH M. FAN
SUPERVISORY PATENT EXAMINER